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## Information Technology to support the building of confidence

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### Abstract

IT-systems today can handle products with character of search or experience. Still open is the handling of products with character of confidence. In combination of psychology, business science and information science can be defined a solution to build confidence by means of information technology. A trustor has expectations before interacting with a trustee. Depending on how far his expectations are fulfilled a “degree of confidence” can be determined. A control loop can be used to observe the development of this degree and to keep confidence alive. This basic structure can be transferred into IT-systems.

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*Keywords:* products with character of confidence; degree of confidence, application to build confidence

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### 1. Introduction

Information technology has become an important part of the business world. Communications as well as economic transactions like selling, buying or payment are supported by IT-systems. Concerning future developments comes up the question where there might be a frontier of what can be supported by IT. This question has a technical perspective concerning the development of future IT-systems, tools, applications and features. Another perspective is the personal perspective. People rely on IT-systems, but even with good

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systems and good features it will not be possible to support all future personal interaction between people especially between business partners. The combination of both perspectives leads to the question how IT-systems might be able to support people in personal interaction.

## **2. Situation of today**

From business side personal interaction mainly is oriented on selling or buying products. In dependency of characteristics of products can be described in how far the products can be handled by IT-solutions. One kind of systematisation of products is the categorisation in products with characteristics of search, products with characteristics of experience and products with characteristics of confidence (credence qualities, credence attributes) [1].

A product with characteristics of search can be described properly before it is used and it can be judged after the use. Examples for such products are books, tickets or music. One for an IT-solution for such products is [www.amazon.com](http://www.amazon.com). Statistics show that products with characteristics of search today are the products that are handled most in e-commerce-solutions like online-shops. So IT-solutions for product with characteristics of search are available and widely spread.

Products with characteristics of experience can not be described properly before use but can be judged after use. Examples for such products are travel, hotel, education. One for an IT-solution related to such products is [www.holidaycheck.com](http://www.holidaycheck.com). IT-solutions for handling products with characteristics of experience are mainly based on the experience of former user of the products. So following user can get information for a more properly description of the product he is going to use. IT-solutions for product with characteristics of experience are getting available and start getting acceptance.

Products with characteristics of confidence can not be described properly before use and even after the use they can not be judged properly. Examples for such products are medical services, consulting services, intangible products or service products. This means that the customer can not judge the product in an objective way. In consequence the customer has to have confidence concerning the quality of the product and concerning the reliability of the supplier. IT-solutions for product with characteristics of confidence still are not available but will be a next step in the development of IT-systems for the management of customer relationships.

## **3. Confidence**

There is a similarity between “confidence” and “trust”. In the context of Information Technology and Managerial Sciences “trust” often is used. Like in the expression “trust in IT” the word “trust” often is seen in a more technical sense. In the context of products “confidence” is more suitable as it implies expectations of a customer.

In different scientific disciplines one will find multiple definitions of confidence. But one will also find some common key characteristics of how situations of confidence are described. Situations of confidence mean that there is a strong dependency between the trustor and the trustee. Included is that there is a longer lasting relationship between the involved partners. Situations where the trustor has to give confidence are situations with risk. For the trustor this means to face uncertainty [2].

Confidence is necessary to keep capable of acting in such situations. The behaviour of the trustor is oriented towards future interaction due to the long lasting dependency. The trustor has positive expectations because he is going into the dependency. The trustor as well accepts a vulnerability knowing that his expectations might not be fulfilled. Therefore, he allows vulnerability in a specific range of disappointment [3-5]

### *3.1. Lifecycle of confidence*

#### *3.1.1. Initial building of confidence*

The building of confidence starts with an initial confidence. This can be understood as advance confidence that is given from the trustor to the trustee based on trust propensity.

After the initial building of confidence interactions between the involved partners will follow. In a sense of business interaction this can be understood as interactions that are part of the business relationship. These interactions for example are negotiations, the act of buying or selling as well as service and support when using the product [6].

During the lifecycle of confidence situations of interaction have effects on the confidence. These effects might strengthen or reduce the confidence.

#### *3.1.2. Effects strengthening confidence*

One effect strengthening confidence is that the trustor believes in the competence of the trustee to be able to fulfill the expectations. Another effect is the good will of the trustee to do good to the trustor, aside from an egocentric profit motive. To strengthen confidence the trustee should have integrity. This means that the principles of behaviour of the trustee can be accepted by the trustor [3, 7].

#### *3.1.3. Effects reducing confidence*

Effects reducing confidence mostly are based on disappointments of the trustor. This is a result of not fulfilled expectations of the trustor especially in central expectations both sides know about. Free will to violate confidence, wrong promises, lies, excessive control, excessive security meaning that trustee is not willing to fulfill expectations will have confidence reducing effects. Neither a trustee is reliable if he is not able to fulfill expectations. An excessive enforcement of own interests hinders the relationship and might result in a lack of prosperity. Such breaches of confidence might have fundamental effects [8].

#### *3.1.4. Tolerance between maximum and minimum of expectation (corridor)*

Due to the existence of effects strengthening confidence and effects reducing confidence there will be variations in the intensity of the confidence. This might be called “degree of confidence”. To keep the capability to act the trustor will allow a tolerance between a maximum and a minimum concerning the fulfilment of his of expectations. This might be called “corridor of confidence”. Unique mistakes - having an effect that reduces confidence - are accepted by the trustor. Repeated mistakes can lead to strongly reduced confidence. One result might be that the confidence is reduced so strong that the relationship between the involved partners will be finished.

### *3.2. Logic of confidence*

#### *3.2.1. Basic logic of confidence*

The trustor has a specific degree of confidence when he comes into a situation of interaction with the trustee. He has expectations how the interaction will change his confidence. The corridor of expectations defines the range between the minimum and the maximum in the degree of expectations that will be reached after the interaction. For the possible degree of expectations after the interaction a distribution can be defined that shows the probability of different degrees of confidence. This distribution does not have to be a normal distribution.

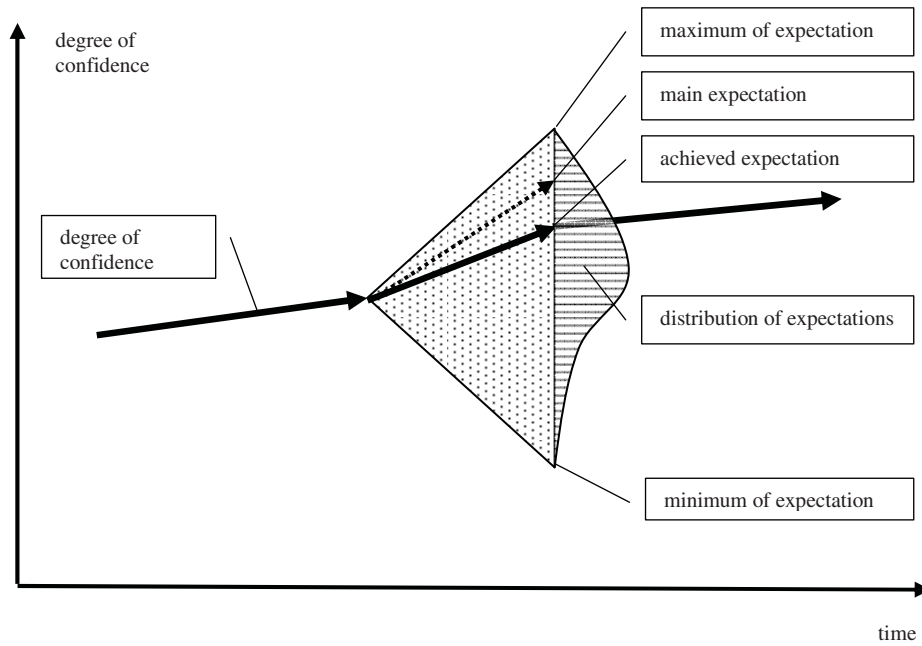


Fig. 1. Basic logic of confidence with the corridor of expectations and possible effects on the degree of confidence by a situation of interaction

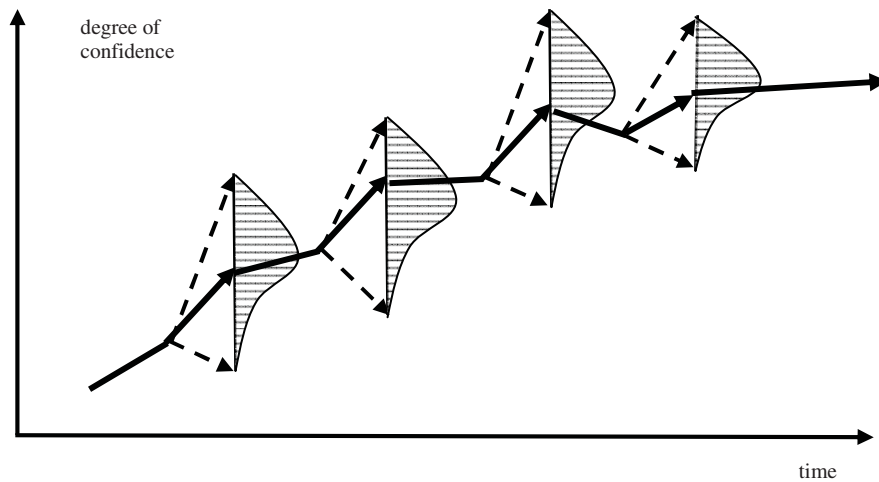


Fig. 2. Development of the degree of confidence in dependency of achieved expectations

A longer lasting business relationship consists of several situations of interaction. During this relationship there will be changes in the degree of confidence. Main expectations will not be fulfilled or will be fulfilled

more the expected. So there is a development in the degree of confidence in the course of time. This development is structured by phases of interactions and phase between interactions.

To keep confidence “alive” the degree of confidence should stay over a specific value. In reality the degree of confidence will be between 100 % and about 60 %. 100% would mean that the “maximum of expectation” is fully fulfilled. The degree of confidence can be measured as personal, subjective feeling as well as a more objective information like the proportion between fulfilled and expected values, for example a stock-market price or a grade.

### 3.2.2. Control loop for confidence

In a business context a company as trustee will be interested to get to know the degree of confidence a customer as trustor has. The trustee also will be interested in keeping the degree of confidence in the range that allows a longer lasting relationship between him and the trustor. This also means that the trustee needs an instrument to get the information about the development of the degree of confidence to be able to react on crucial changes in the degree. One useful instrument might be a loop to control confidence.

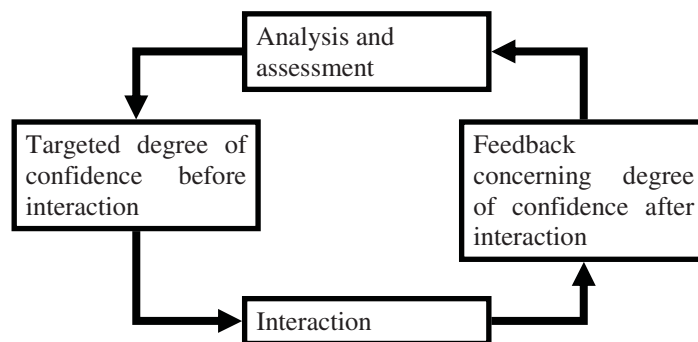


Fig. 3. Control loop for confidence

The trustee will define a degree of confidence that he is targeting before starting the interaction with the trustor. From his side he will try to execute the interaction in a way that the targeted degree is reached. After the interaction the trustee has to get a feedback concerning to degree of confidence that has been achieved. In comparison of the targeted degree and the achieved degree possible differences can be calculated. This analysis and assessment is the basis for conclusions of the targeted degree of confidence has to be changed and which action have to be taken to fulfill the expectations the confidence of the trustor in the next interaction.

## 4. IT-system to support confidence

Control loops are a common instrument to connect business functions with IT-systems. The business function that will profit the most from building and maintaining confidence is the customer relationship management.

#### 4.1. Application

For the development of IT-systems- especially IT-applications- it is useful to have well defined algorithms or processes. This enables an accurate specification for the different parts of an IT-system. For the contact between business partners the application or application layer is the most relevant part of an IT-system.

In an application to build and maintain confidence in a customer relationship the principle structure can be oriented on a control loop for confidence. So by the support of the IT-system the trustee defines a degree of confidence that he is targeting before starting the interaction with the trustor. This definition might be initially based on free ideas or on experience. After some interactions with the trustor the definition of the targeted degree of confidence will be result of analysis.

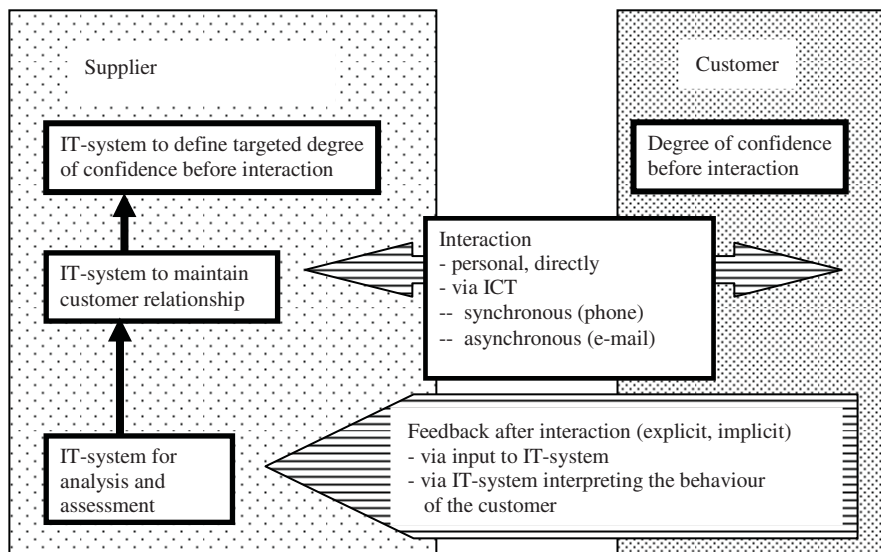


Fig. 4. Application to build and maintain confidence

Before the interaction the trustor – in a business relationship this mostly will be the customer – has a degree of confidence concerning the trustee. This degree might be known or could be calculated.

The interaction itself can be personal in direct contact between persons or via information and communication technology (ICT). It can be synchronous, for example by telephone, or asynchrony, for example by electronic mail.

After the interaction the trustee will be interested in the effects the interaction had on the degree of confidence. Therefore, a feedback will be taken. This can be done in getting an explicit reaction of the trustor in form of a reasoned opinion or in an implicit form of interpreting the behaviour of the customer during and after the interaction. For both forms of getting a feedback IT-systems can be used, for example for an explicit online-feedback or as an application analyzing the behaviour of the customer in the just finished interaction.

The feedback can be used as input for an IT-system that supports the analysis and the assessment of the current and maybe modified relationship between trustee and trustor.

In existing IT-systems for customer relationship management the results of the current analysis can be used to define the next steps to maintain the customer relationship. This for example can be a statement which

products should be offered next and in which form they should be presented to the customer as trustor. So maybe there could be designed a form of presentation that truly inspires confidence for the customer.

With these information a new targeted degree of confidence can be defined before a next interaction starts.

#### 4.2. Communication

Building and maintaining confidence using IT-systems from the perspective of business information science means some changes in the structure of communication.

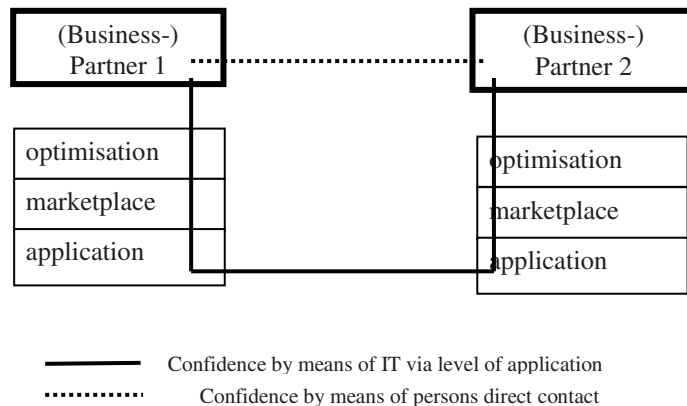


Fig. 5. Communication

Confidence by means of personal interaction mostly means direct contact between the business-partners.

If confidence is built and maintained by means of information technology the contact between the business-partners you might have to use different layers of communication. Nearest to the persons is the layer of optimization. On this business oriented layer the personal interests of the partners are defined. The layer of a marketplace brings together aspects of business optimization and aspects of technical applications. Here are defined roles of the business partners for example whether they are seller or buyer. The layer of application is more technical layer where the communication between the partners is handled by systems of information and communication technology.

### 5. Effects

The possibility of using information technology to support the building of confidence offers benefit but also risks. The effects depend on the interests of trustors and trustees in a relationship. Especially in business relationships with companies as trustees and customers as trustors these effects are of relevance.

#### 5.1. Effects for companies

A main effect for the benefit of companies as trustees is a high loyalty of customer to the company. Even risky products can be handled due to a high degree of confidence which allows some disappointments. So long-lasting relationships to customers can be built and maintained. As a result customer can get part of the companies supply chain even in serious situations what makes easier the planning and acting not only in one company but also in a supply chain.

Risks for companies can be seen in expectations of the customer that might be too high and the expectations of the customer might increase to an unrealistic level. Companies relying on too much on the customers confidence may attempt to handle products that are too risky.

### 5.2. *Effects for customers*

Customers as trustors can benefit from a higher reliability of a company. By confidence based interaction between him and a company the clarity of transactions increases. IT-supported confidence gives the trustor the ability to judge the behaviour of a trustee better because the trustor might get knowledge he did not have before.

Risks for the customers can be seen in the lasting vulnerability and in the anonymity of an IT-System.

## 6. Conclusions

Using information technology to support the building of confidence especially in business relations today still is an unusual procedure. The more service oriented products will be handled via IT-systems like the World Wide Web the presented approach will gain more relevance.

It is possible to build and maintain confidence in an economic environment with IT-systems. Human partnership will not be replaced by such solutions. IT-systems can help to recognize risks in relationships and can support efforts to keep relationships alive.

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